

ABSTRACT OF THE DISCLOSURE

A stainless steel alloy that exhibits both high strength and toughness as a result of having particular ranges for chemistry, tempering temperatures and grain size. The alloy is a precipitation-hardened martensitic stainless steel with an ultimate tensile strength of at least 1200 MPa, a Charpy impact toughness of greater than 55 J, and a grain size of ASTM 5 or finer. The alloy consists essentially of, by weight, 14.0 to 16.0 percent chromium, 6.0 to 7.0 percent nickel, 1.25 to 1.75 percent copper, 0.5 to 1.0 percent molybdenum, 0.03 to 0.5 percent carbon, niobium in an amount by weight of ten to twenty times greater than carbon, the balance iron, minor alloying constituents and impurities.

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